Kunkai Lin

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EDUCATION

University of California, Berkeley Sep 2019 - May 2023
B.A. in Computer Science Berkeley, CA

- Major GPA: 3.71/4.00
- Relevant Coursework: Operating Systems, Database Systems, Efficient Algorithms, Data Structures, Machine Structures, Computer Security, Optimization Models, Machine Learning, Artificial Intelligence, Computational Photography

TECHNICAL SKILLS

Languages: Java, Python, C, Golang, HTML, CSS, JavaScript, RISC-V
Libraries/Frameworks/Tools: NumPy, Sqlite, Scikit-learn, Opencv, Pandas, Django, Git

EXPERIENCE

ByteDance Jun 2021 - Aug 2021
Software Development Intern Beijing

- Developed a website for China PA Department used for recording the usage of meeting rooms in main buildings
- Cooperated with UI designer in the group to improve the website appearance and implemented the back end for the website to deal with the information of meeting rooms from database
- **Technologies and Libraries:** HTML, CSS, Python, Django

UC Berkeley Department of EECS Aug 2022 - Present
CS 162 Course Staff Berkeley, CA

- Fall 2022 CS 162 Reader, Operating Systems and System Programming, Prof. Natacha Crooks
- Graded student works, held the midterm review sessions and answered technical questions related to course materials and projects during weekly office hours
- **Technologies and Libraries:** C, OS

PROJECTS

PintOS Operating System Feb 2022 - May 2022

- Designed an x86 instruction set based OS kernel to simulate the real operating system and enforced user and kernel level synchronization with semaphores, locks and condition variables to prevent race conditions
- Facilitated user program with argument passing, process control syscalls, floating point operations and file systems following Berkeley Fast File System (FFS) structure
- Implemented functionalities to support the C pthread API and strict priority scheduling that allows priority donation for multi-threading
- **Technologies and Libraries:** C, OS

End-to-End File Sharing System Jul 2021 - Aug 2021

- Applied the cryptographic primitives, including AES, HMAC, digital signatures and RSA, to design and ensured data confidentiality, integrity and authenticity
- Implemented the client application for a secure file sharing system that allows users to store, load, share, receive and revoke the access to files
- **Technologies and Libraries:** Golang, Crytography

Numc Apr 2021 - May 2021

- Developed a C project that imitates Numpy's matrix operations including addition, subtraction, negation, multiplication and power
- Speeded the computation up to 1018x faster by applying techniques including SIMD instructions and parallel computation with OpenMP
- **Technologies and Libraries:** C, OpenMP

Bear Maps Oct 2020 - Nov 2020

- Implemented the back end for a web-based routing application (the mapping and routing of Berkeley) inspired by Google Maps by using existing front end and OpenStreetMap mapping data
- Developed map rastering and routing and applied the A* algorithm with the graph representation to implement shortest path routing
- **Technologies and Libraries:** Java